

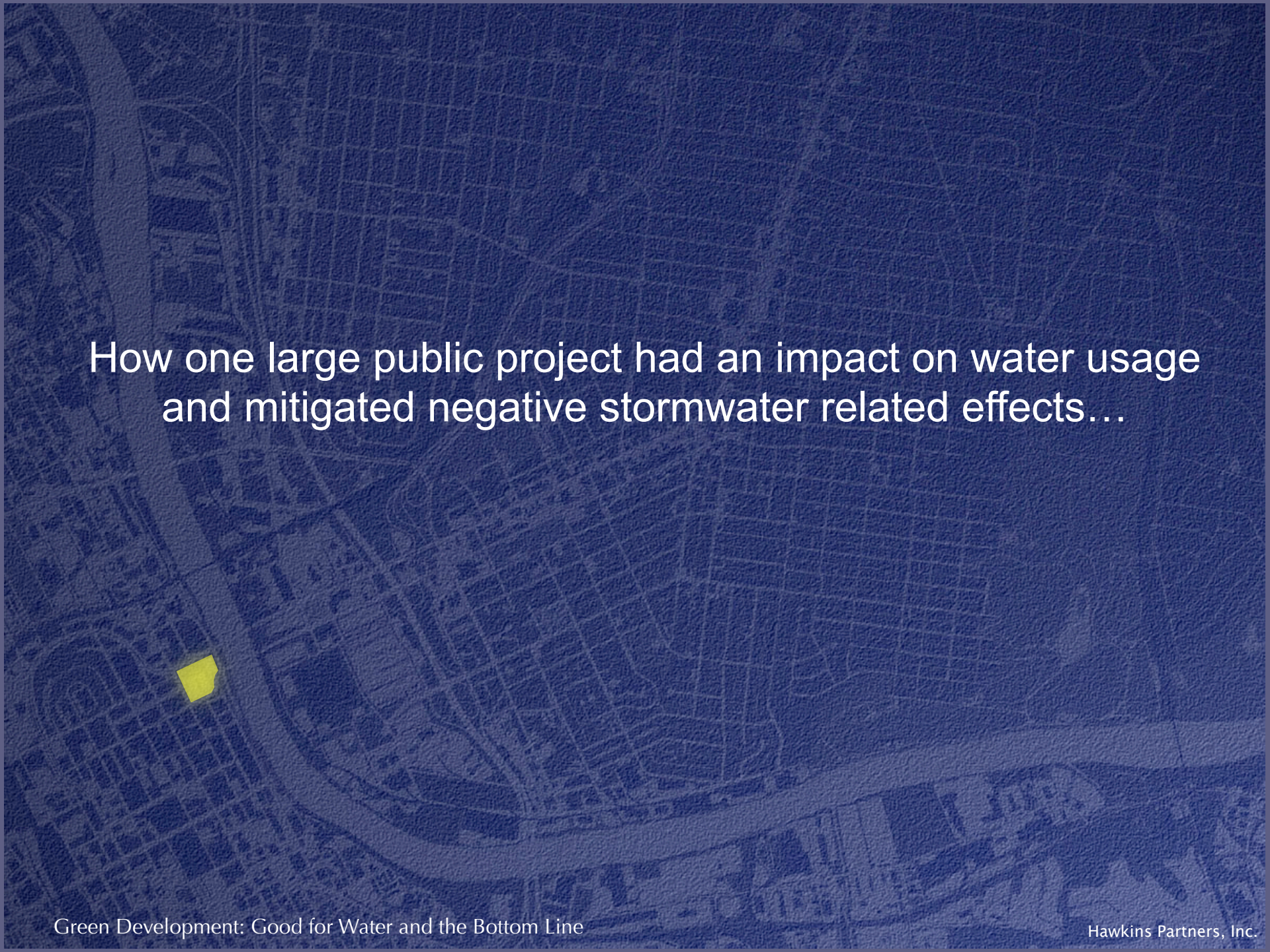
# NASHVILLE PUBLIC SQUARE: \_\_\_\_\_

METRO NASHVILLE DAVIDSON COUNTY  
NASHVILLE, TN



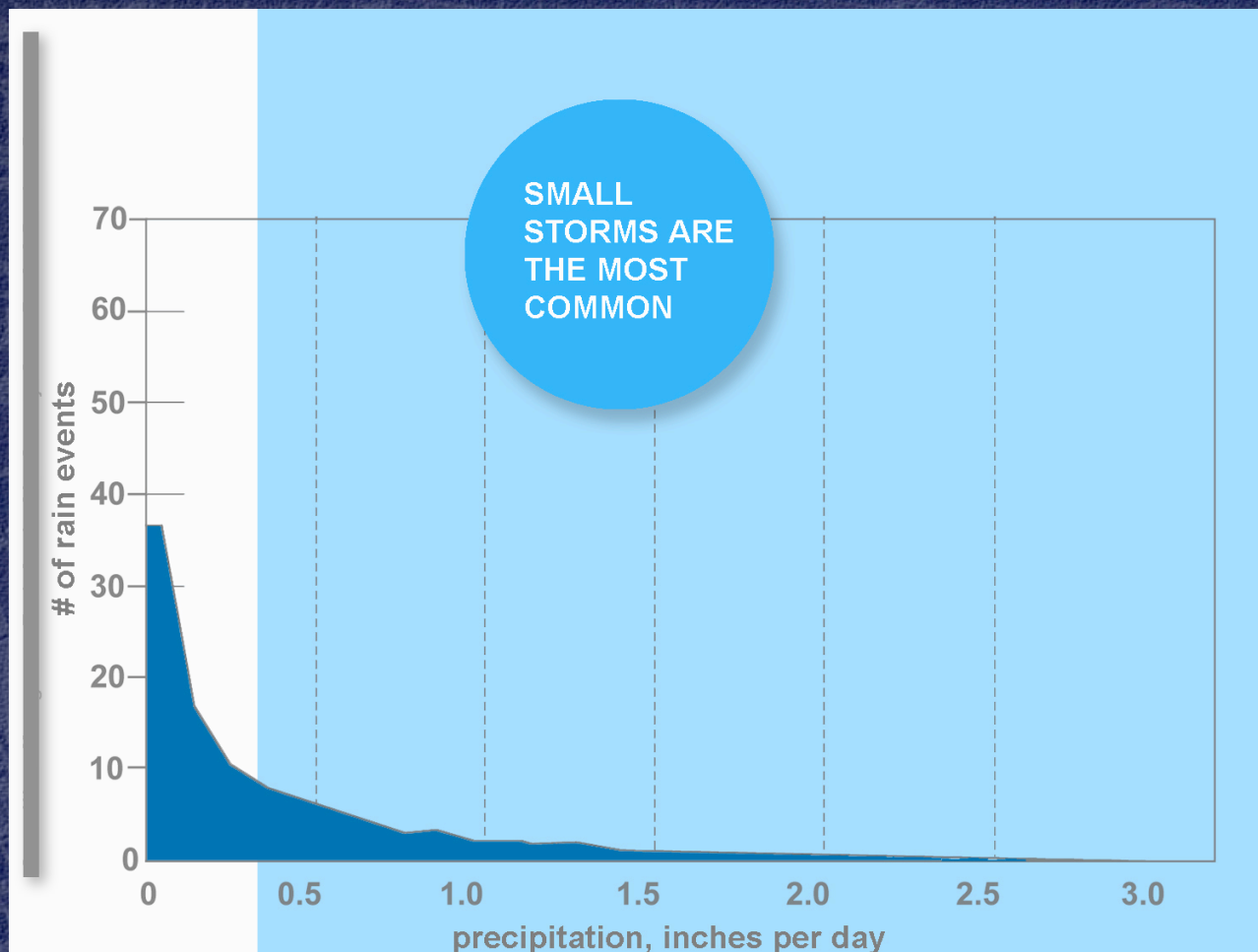
*A Case Study....*



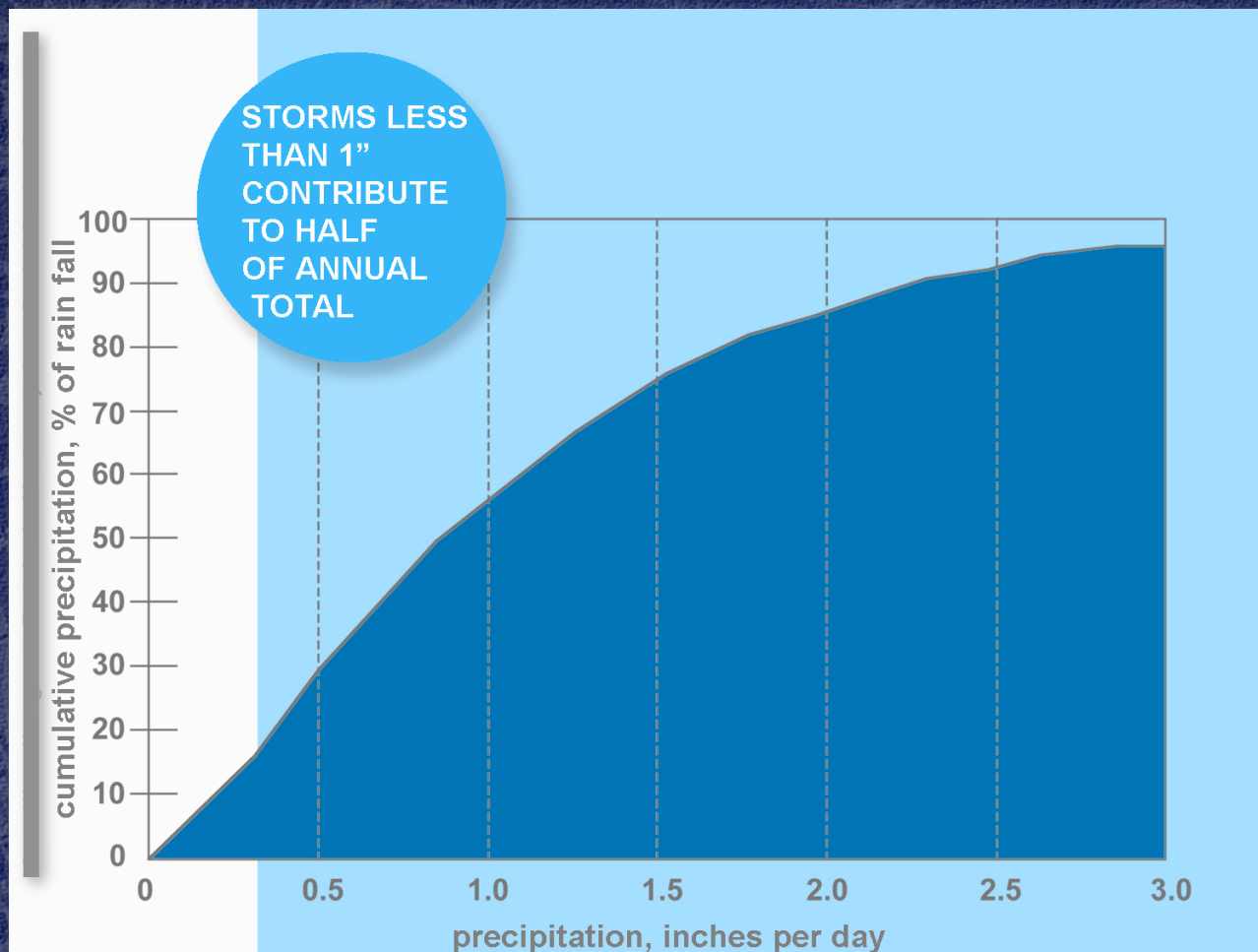
The background of the slide is a dark blue aerial photograph of a city street grid. A small, irregularly shaped area in the lower-left quadrant is highlighted in a bright yellow color, likely indicating the location of the project discussed in the text.

How one large public project had an impact on water usage  
and mitigated negative stormwater related effects...



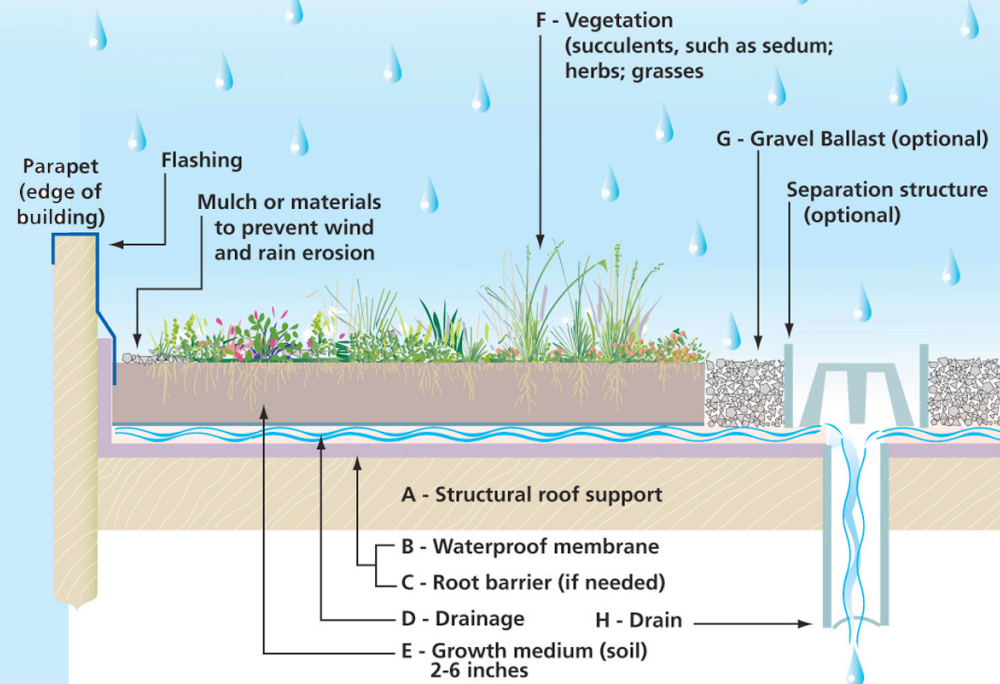






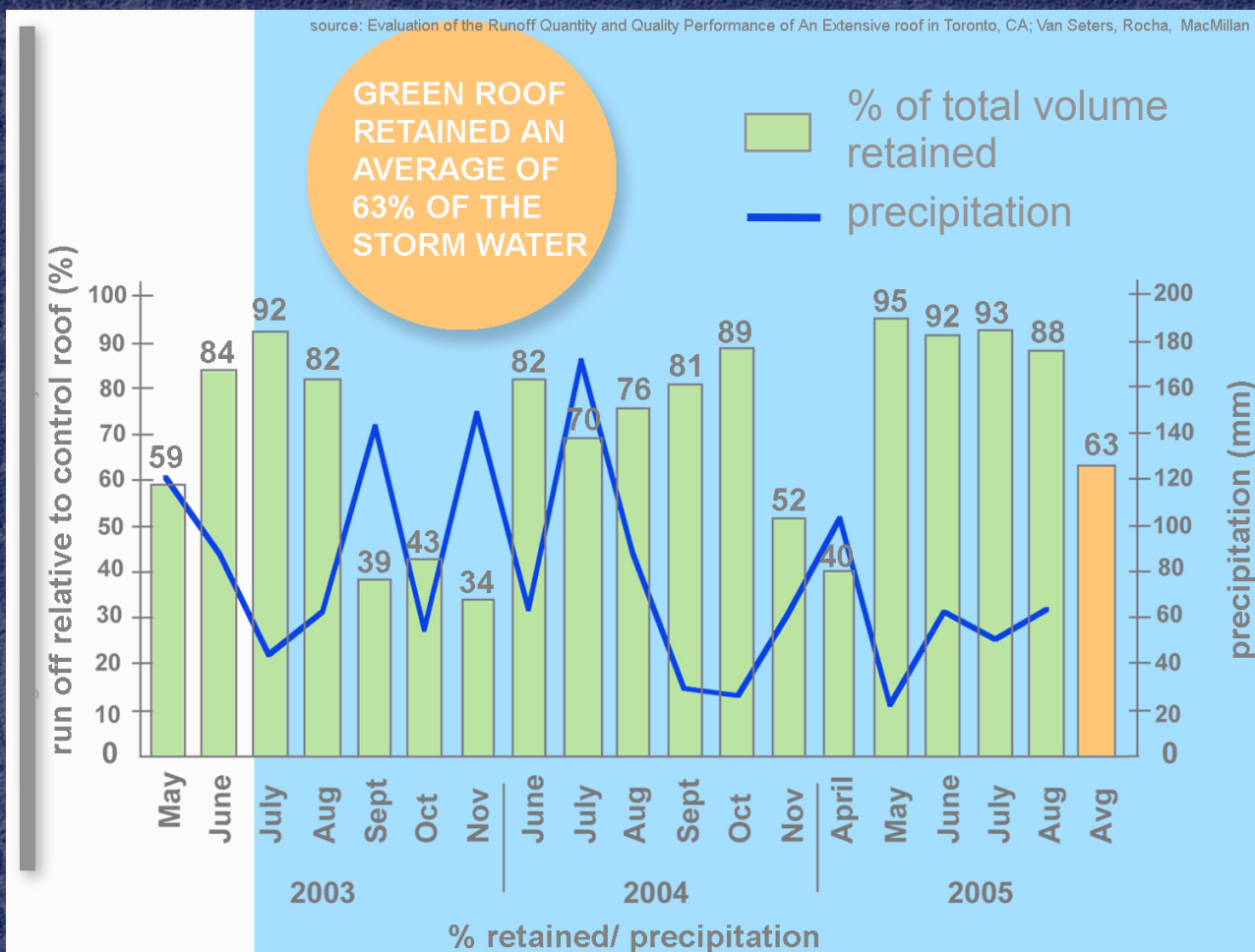


## Green Roof Components



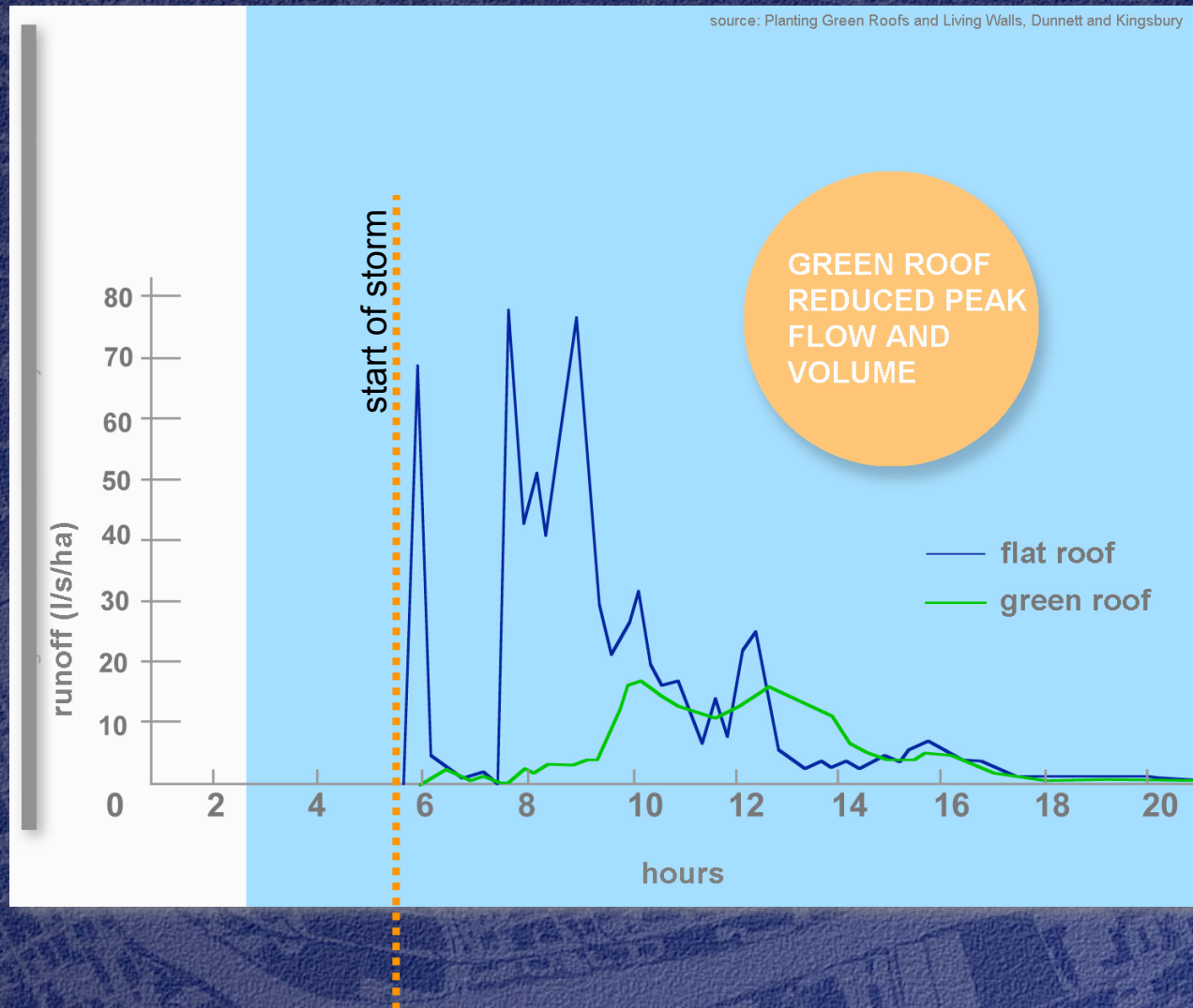


source: Evaluation of the Runoff Quantity and Quality Performance of An Extensive roof in Toronto, CA; Van Seters, Rocha, MacMillan





source: Planting Green Roofs and Living Walls, Dunnett and Kingsbury







**GREEN ROOFS  
ARE  
MULTI-FUNCTIONAL**



## Types of Green Roofs

### extensive

Shallow Soil Depths (2"-12")  
Least Heavy (8lbs/inch)  
Lowest cost (\$18-25sf)  
Less diverse plant palette  
Lower water retention  
Lower maintenance



### semi-intensive

Intermediate Soil Depths (12"-24")  
Heavier than extensive (8lbs/inch)  
More Costly (\$25-50sf)  
More diverse plant palette  
Higher water retention  
More maintenance



### intensive

Deeper Soil Depths (24"-48")  
Heaviest (8lbs/inch)  
Highest Cost (\$50sf and Up)  
Most diverse plant palette  
Highest water retention  
Highest maintenance





**Nashville  
Public  
Square**  
Nashville, TN

**intensive**





# Design Team: \_\_\_\_\_

Landscape Architects: Hawkins Partners, Inc. :: Wallace Roberts Todd ::

Architects: Tuck Hinton Architects ::

Engineers: BWSC ::

Structural Engineers & Parking Consultants: Walker Parking ::

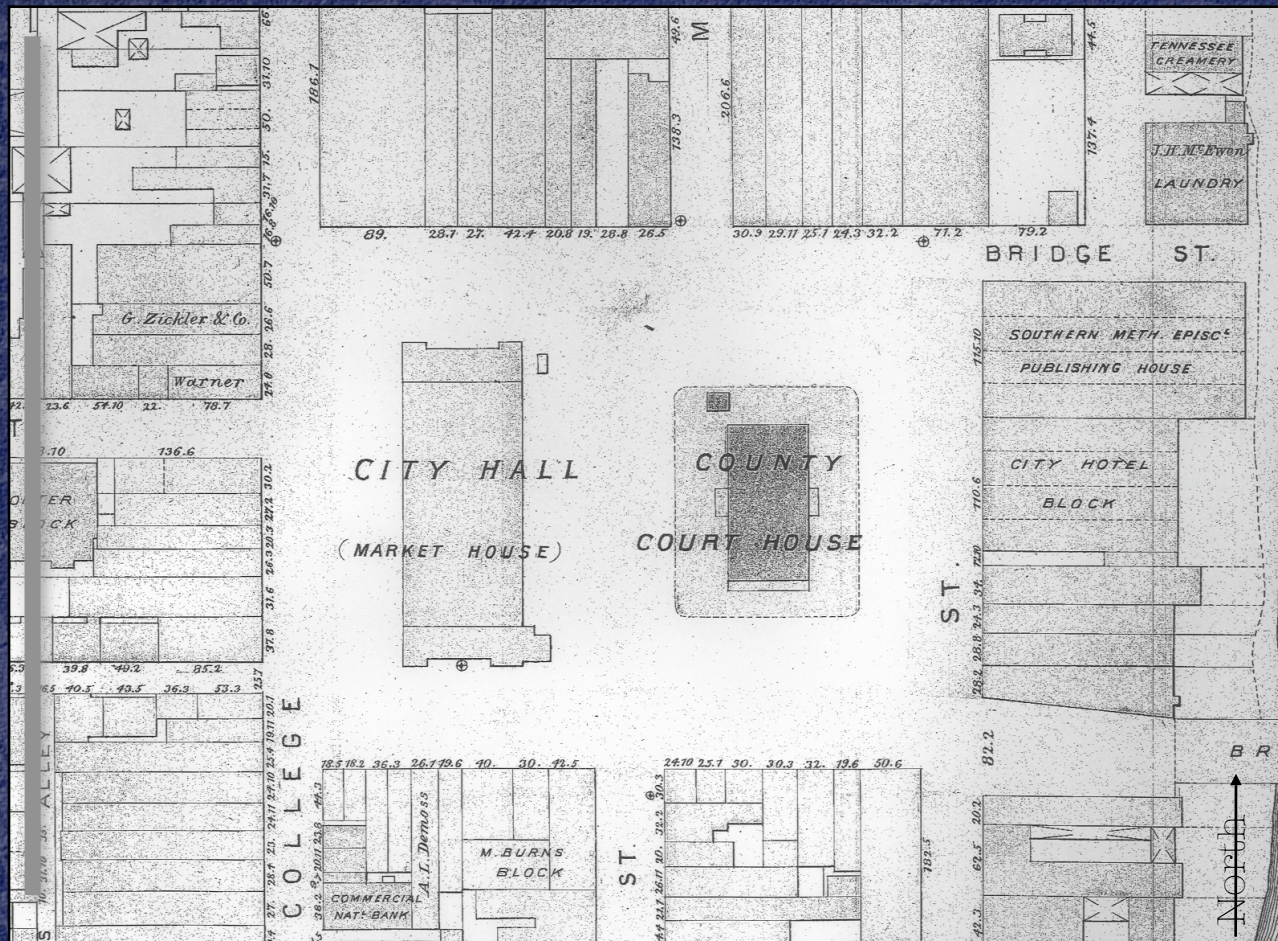
General Contractor: Brasfield & Gorrie ::

# Client: \_\_\_\_\_

Metropolitan Nashville / Davidson County  
Government ::



## PREVIOUS SITE CONDITIONS



## 1889 “SQUARE”



# NASHVILLE PUBLIC SQUARE

*Courthouse, 1937*



PREVIOUS SITE CONDITIONS



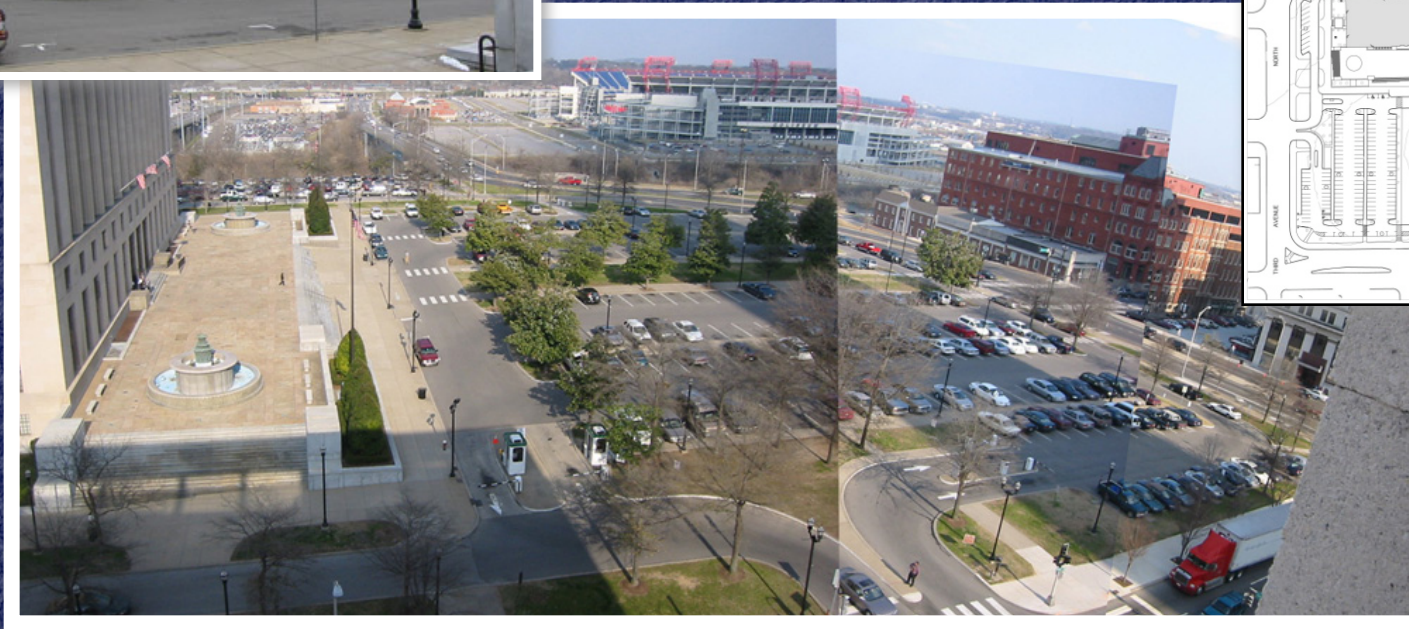
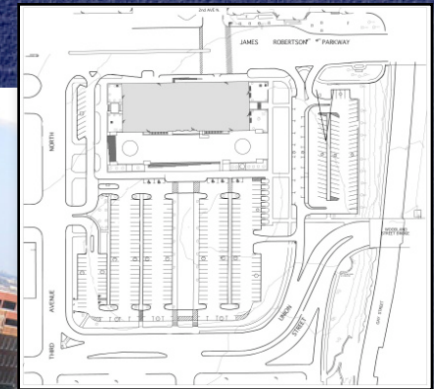
**1937 COURTHOUSE "SQUARE"**



# NASHVILLE PUBLIC SQUARE

## PREVIOUS SITE CONDITIONS

Over 130,000 sf of Asphalt pavement  
Some planting zones, but all had 6" curbs and  
minimal ability to recharge groundwater.

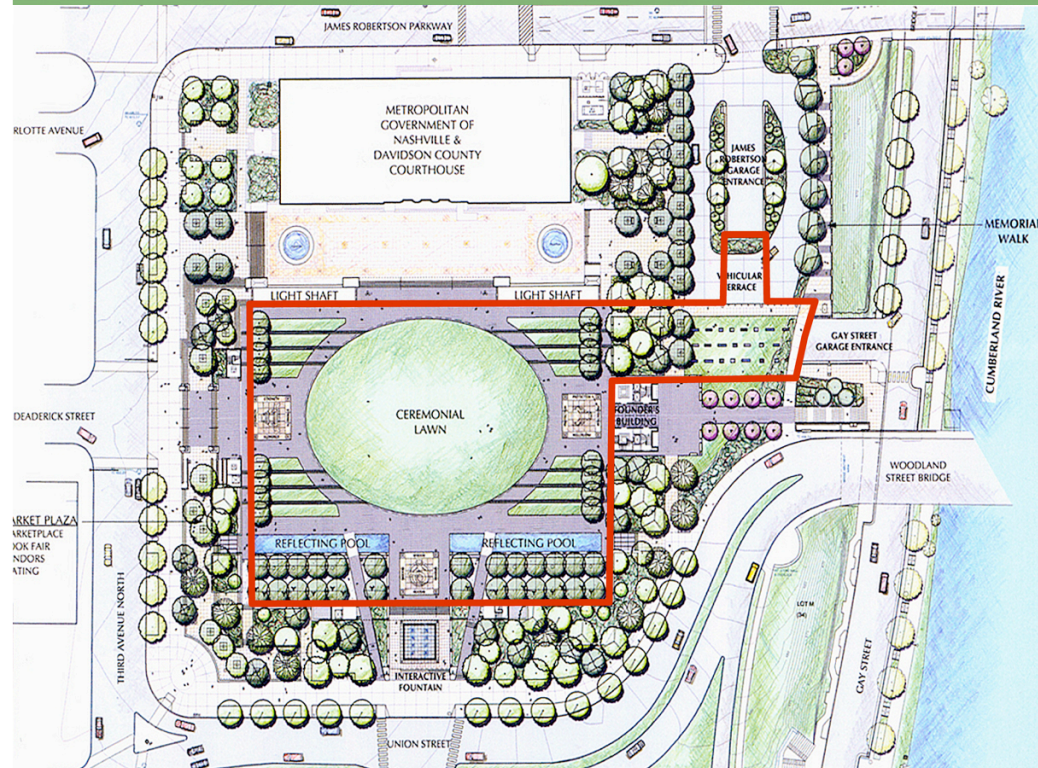


## 2003 COURTHOUSE “SQUARE”



Nashville  
Public  
Square  
Nashville, TN

includes a 2.5 acre  
green roof over parking garage



*7.5 Acre Urban Park Site.*



# NASHVILLE PUBLIC SQUARE

COMPLETED PROJECT

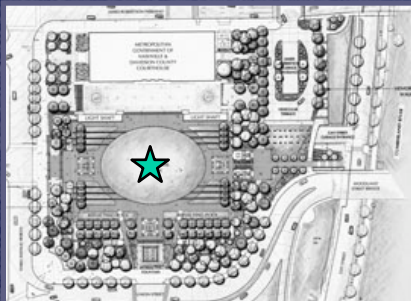


*Parking lot is replaced with a new civic park.*



# NASHVILLE PUBLIC SQUARE

## CIVIC GATHERING and ACTIVITY GENERATOR

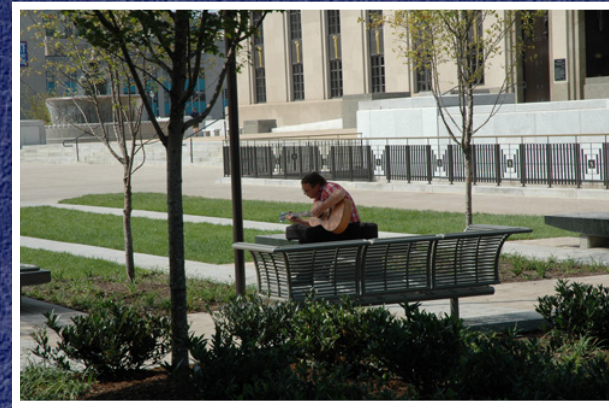


*The design of the Public Square offers Nashvillians community gathering space in the heart of downtown, As well as fountains, both interactive and reflective, activate the park. The reflecting pools are merely one inch deep to reduce their weight on the structure below.*

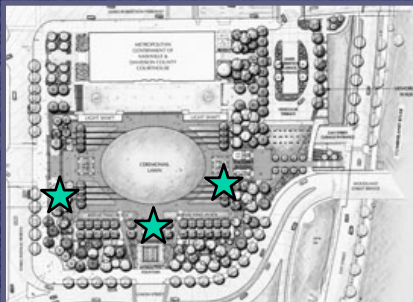


# NASHVILLE PUBLIC SQUARE

## DIVERSITY OF SPACES



*Scaled to the community and comfortable for the individual.*





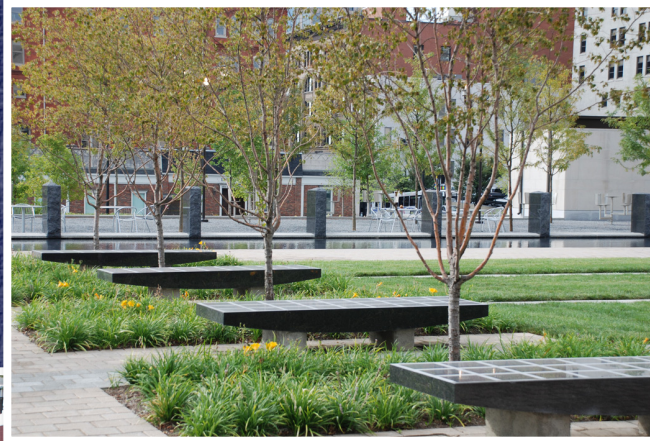
**Nashville  
Public  
Square**  
Nashville, TN

**43 different species of which 81% are  
native to the SE region and 63% are  
native to Middle Tennessee.**





# NASHVILLE PUBLIC SQUARE



## ***DIVERSITY OF PLANT SPECIES***



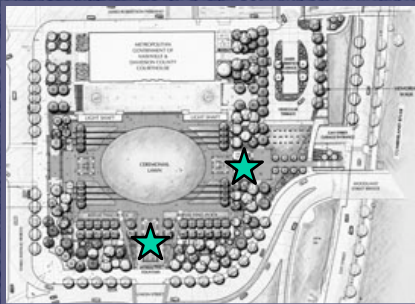


# NASHVILLE PUBLIC SQUARE

## EDUCATION and HISTORICAL INTERPRETATION



*Founders Tower includes historical interpretation of the origin and evolution of the Public Square in Nashville.*



*Photo etchings on the granite piers showcase the businesses and activities that were once part of life on the Public Square.*





Nashville  
Public  
Square  
Nashville, TN

utilized expanded slate planting  
substrate, depths ranged between  
12"-60"





**Nashville  
Public  
Square**  
Nashville, TN

**water features were shallow  
in order to minimize weight**





# NASHVILLE PUBLIC SQUARE

## WATER HARVESTING



2 stories down

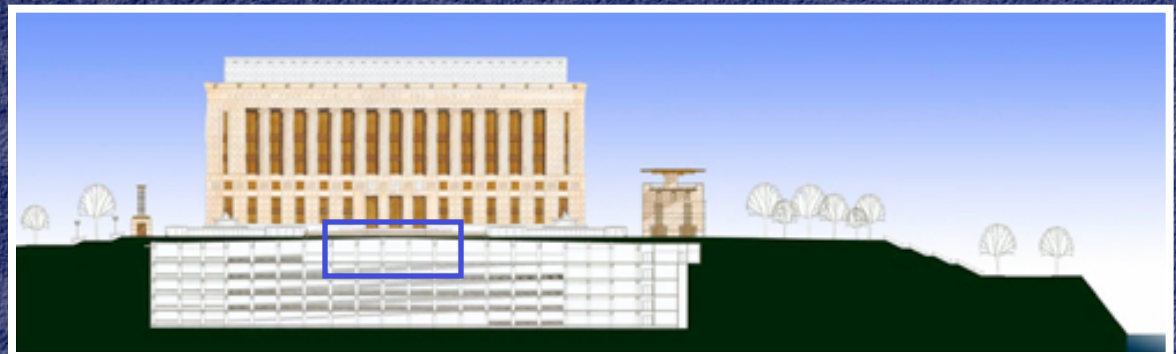


1 story down

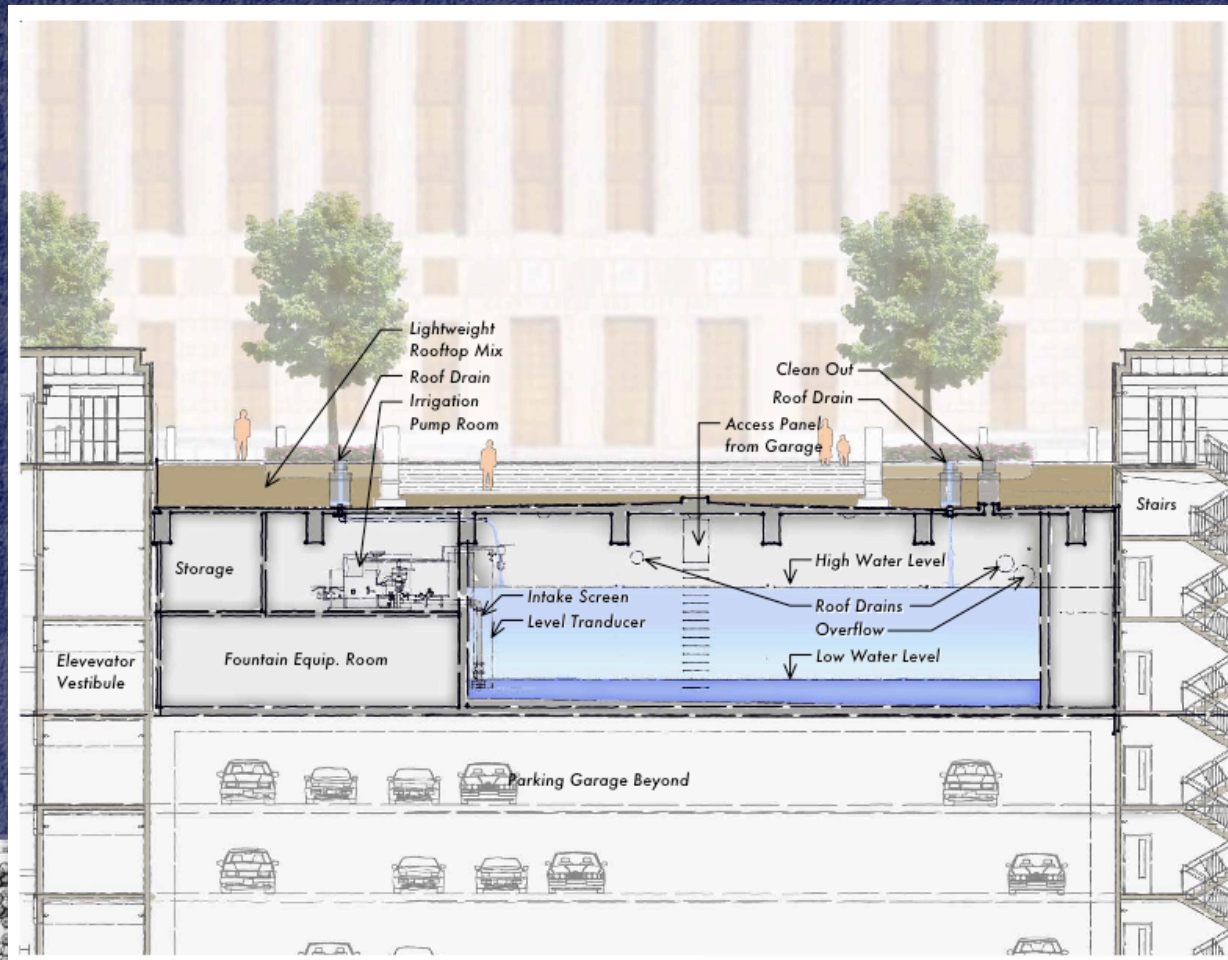


Ground Level

*All of the stormwater, not otherwise utilized by plants, that falls on this 2.25 acre greenroof is harvested into a subterranean concrete tank. The tank is two stories tall and has the capacity to hold up to 57,000 gallons of harvested rainwater and unused irrigation water for irrigation.*







*Harvesting Tank Cross Section*





# Challenges : ---

1. *Political Leadership with a Long-Term Community Vision.*
2. *Looking beyond singular “economic” justification for harvesting water.*
3. *Design collaboration with structural and civil engineers to effect design.*
4. *Logistics coordination of large-scale rooftop planting installation*



# Realized Benefits : \_\_\_\_\_

1. Community now has a “**long-awaited**” **Public Square** to accompany it’s beautifully renovated historic Metro Davidson County Courthouse.
2. **Traded a surface parking lot** for a 5-story garage and new urban park that is designed to interpret the story of historic square.
3. Dramatically **impacted urban heat island** effect, added **two hundred native trees** that will scrub atmospheric particulates and toxic gases from the urban air, and **increased biodiversity** where there was none.
4. Effectively **shifted the outcome of the stormwater cycle**. Thousands of gals per month of stormwater are now filtered then harvested into a 57,000 gal tank for reuse on-site instead of being dumped into the nearby Cumberland River.
5. Harvested rainwater and groundwater allow the **conservation of literally hundreds of thousands of gallons of potable water** each year.



# Lessons Learned : \_\_\_\_\_

1. **Leadership** in sustainable design should be among every institution and government's expressed goals.
2. Large-scale community projects make significant impacts **(+ and -)**.
3. Dealing with stormwater effectively on a **site by site** basis, using greenroofs, harvesting and infiltration techniques, can dramatically reduce pressure on over-taxed and aging infrastructure.
4. Large-scale Capitol projects must also have adequate **Operations and Maintenance** funds allocated.



# NASHVILLE PUBLIC SQUARE



*This is a new kind of courthouse square...with green roof sustainable technology, urban stormwater mitigation, accessibility for every citizen and sense of place to celebrate community, history, and the future.*



# NASHVILLE PUBLIC SQUARE: —————

METRO NASHVILLE DAVIDSON COUNTY  
NASHVILLE, TN

2007 Recipient of the Green Roof Award of Excellence  
In the Intensive Institutional Category  
Green Roofs for Healthy Cities



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